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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/432,545	11/03/1999	MARK EASTON	4255-712	1224

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EXAMINER

CAPUTO, LISA M

ART UNIT PAPER NUMBER

2876

DATE MAILED: 06/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/432,545

Applicant(s)

EASTON, MARK

Examiner

Lisa M Caputo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 November 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2-6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description:

Reference number 208 and the "tape guide" is on Figure 2 but is not in the specification.

Reference number 702 is on Figure 7 but is not in the specification.

Reference number 1100 is on Figure 11 but is not in the specification.

A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

Regarding page 11, lines 11-23: References are made to different parts (with brand names) for Figure 2 but are not on the drawing.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Noyama et al. (U.S. Patent No. 5,235,164, from hereinafter "Noyama").

Noyama teaches a parts supply device and managing method and system having all of the elements and means as recited in claims 1-37 of the instant application.

Noyama discloses that a parts managing section 1 includes a parts storing section 3; a parts cassette 4 serving as a parts supply device; and a parts cassette storing section 5. An electronic parts-accommodating unit 2 composed of electronic parts removably attached onto a cover tape and covered the parts with a carrier tape, the tapes and the parts being wound around a reel, is transported into the parts managing section 1 and stored in the parts storing section 3. The unit 2 is then mounted on the parts cassette 4. The parts cassette 4 is set on the supply section of an electronic parts mounting machine 40 with the unit 2 mounted on the parts cassette 4 so that parts of the unit 2 are sequentially fed to a parts removing position. The unit 2 has a bar code 6 displaying an identification data of the parts, such as the serial number for identification, and name and initial quantity of each of the parts printed thereon. The parts managing section 1 further includes a first bar code reader 7 for reading the bar code 6 when the unit 2 has been set thereinto; a second bar code reader 8 for reading the bar code 6 when the unit 2 is mounted on the parts cassette 4 or removed therefrom; and a reading/writing means 10 for reading data written on a recording section 9 provided on the parts cassette 4 and writing data on the recording section 9. The bar code readers 7 and 8 and the reading/writing means 10 are connected to a parts data processing device 11. The parts data processing device 11 is connected to a

parts data base 12 for storing the data of the parts mounted on the unit 2 held by the parts managing section 1. The parts data processing device 11 is also connected with an inputting means 13 and a display means 14. The inputting means 13 outputs data or an instruction for reading or processing the data stored in the data base 12 to the parts data processing device 11. The display means 14 displays the result of the data processing executed by the parts data processing device 11. FIG. 2 is a side elevation showing the condition in which the parts cassette serving as the parts supply device has been set on the parts mounting machine 40 according to the embodiment. The parts cassette 4 includes a reel mounting section 15, provided in the rear portion thereof, for rotatably mounting a reel 21 of the unit 2 thereon; a feeding section 16, provided in the front end thereof, for intermittently feeding a carrier tape 22 of the unit 2 so as to sequentially move each of the parts to the parts removing position; a winding section 17 for winding a cover tape 23 of the unit 2; and a pivotal lever 18 for driving the feeding section 16. The winding section 17 and the lever 18 are each positioned at a rear portion of the feeding section 16. The parts cassette 4 further includes a locking section 19 for setting the parts cassette 4 on the parts mounting machine 40. The above-described recording section 9 is provided in the locking section 19. FIG. 3 is a block diagram of the recording section of the parts cassette 4 serving as the parts supply device according to the embodiment. The recording section 9 composed of an IC memory includes a storing section 24 for storing the data of the name and quantity of each of the parts held by the unit 2, the data being read and written by a processing/calculating section 25; the processing/calculating section 25 for subtracting

"1" from the initial quantity of the parts stored in the storing section 24 each time one of the parts is taken out from the unit 2, according to a signal inputted thereto from a removal detecting member 28 which will be described later, thus writing a value found by the subtraction on the storing section 24; and a communicating section 26 for sending the data stored in the storing section 24 to the reading/writing means 10 of the parts managing section 1 and a communicating section 41 of the parts mounting machine 40 and receiving a signal therefrom via the processing/calculating section 25. The removal detecting member 28 for outputting a signal upon detection of magnetic force is provided at a position in the vicinity of the termination of the moving locus of a permanent magnet 27 mounted on an end of the lever 18 as shown in FIG. 2. The removal detecting member 28 outputs a signal each time parts is removed from the unit 2. FIG. 4 is a block diagram of the control device of the parts mounting machine 40 according to the embodiment. A storing section 42 stores the data of the program as to the type of each machine to be manufactured, the name and quantity of each part to be mounted thereon, the data as to the position at which each parts cassette 4 is set, and the data as to the period of time required for mounting the necessary parts on one substrate. A control section 43 controls the operation of the parts mounting machine 40 based on the program; decides whether or not the parts cassette 4 is set in position; decides the order of parts shortage among the parts cassette 4; and sends data to the communicating section 41 and a display section 44 and receives data therefrom. The display section 44 displays the result decided by the control section 43. The inputting means 13 connected with the parts data processing device 11 of the parts managing

section 1 is provided with a bar code reader 31 as shown in FIG. 5. The inputting means 13 is further provided with an instruction code plate 32 on which a bar code 33 corresponding to each instruction to be transmitted to the parts data processing device 11 has been written and a parts code book 34 in which a plurality of parts code sheets 35 are bound for each kind of machine to be manufactured. A bar code 36 corresponding to each of the parts necessary for each kind of machine is written on the parts code sheets 35. Owing to this construction, the reading of the stock data of each of the parts necessary for each kind of device and various processings can be accomplished by only the operation of the bar code reader 31, which eliminates data input operation by means of keys.

As shown in FIG. 6, the parts managing section 1 includes a parts combining device 38 for combining the units 2 holding parts, the number of which is less than a predetermined number. The combining device 38 is provided with a signal outputting means 39 for outputting a signal indicating the data of units 2 to be combined to the parts data processing device 11. The outputting means 39 is connected with a bar code reader 39a for reading the bar code 6 of the units 2 to be combined. Based on the signal outputted from the outputting means 39, the parts data processing device 11 erases the data of the units 2 to be combined before the combination and automatically stores the data of the combined units 2 after the combination. In the above-described construction, when the unit 2 is transported into the parts managing section 1 and held by the parts storing section 3, the bar code 6 of the unit 2 is read by the bar code reader 7 and the data thus read is stored in the data base 12 of a storage 49 via the parts data

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processing device 11. Each unit 2 is held by the parts storing section 3 at a predetermined position thereof. The position at which the unit 2 has been accommodated may be displayed by the display means 14. The flow of the parts management in supplying parts on the parts mounting machine 40 is described with reference to the flowchart shown in FIG. 7. Based on the kind of a machine to be manufactured, the unit 2 is mounted on the parts cassette 4 at step #1. When the bar code reader 8 reads the bar code 6 at step #2, the data of the name and quantity of each of the parts of the unit 2 are fetched from the data base 12, and at step #3, the reading/writing means 10 writes the data on the storing section 24 of the recording section 9 of the parts cassette 4. At step #4, the parts cassette 4 is transported to the parts mounting machine 40. At step #5, the parts cassette 4 is set on a predetermined position of the parts supply section of the parts mounting machine 40. When all parts cassettes 4 have been set on the parts mounting machine 40, an instruction for checking whether or not all parts cassettes 4 have been set on the parts mounting machine 40 is inputted to the parts mounting machine 40. Based on a program stored to the storing section 42 as a result of the input of the signal, the control section 43 of the parts mounting machine 40 reads each parts name from the storing section 24 of each parts cassette 4 at step #6 and decides whether or not each parts cassette is set at the predetermined position at step #7, thus displaying the result obtained by the decision of the control section 43 on the display section 44 as shown in FIG. 8. If any parts cassette have not been set at the predetermined position and then they are displayed as "NG" on the display section 44, they are set again at step #8. Then, the program returns to step

#6. If all parts cassette have been set in position and thus they are displayed as "OK" on the display section 44, the program goes to step #9 at which an operation for mounting parts held on the parts mounting machine 40 on a substrate starts. During the parts mounting operation, the lever 18 pivots every time each of the parts is taken out from the unit 2. As a result, the removal detecting member 28 outputs a signal and consequently, the processing/calculating, section 25 subtracts "1" from the data as to the number of parts of the parts cassette stored in the storing section 24, thus rewriting the data of the storing section 24. In order to check for a parts shortage of the parts cassette during the parts mounting operation, an instruction indicating the advance notice of the parts shortage is inputted to the communicating section 41 of the parts mounting machine 40. Then, at step #10, the control section 43 reads the current number of parts held by each parts cassette 4 and calculates the period of time required for mounting all of parts to be mounted which are held by the parts cassette, based on the number of parts to be mounted on one substrate and the period of time required for mounting parts thereon, thus displaying the data obtained by the calculation on the display section 44 at step #11 as shown in FIG. 9 (advance notice). The parts cassette 4 is exchanged with an appropriate parts cassette 4 at step #12, as required. As a result, the order of parts shortage among the parts cassette 4 is decided by the control section 43 of the parts mounting machine 40 and in the order, the parts cassette 4 lacking the parts is exchanged for a new parts cassette 4. Therefore, the parts mounting machine 40 can be operated without stopping it, thus preventing reduction of the

operating efficiency of the parts mounting machine 40 (see Figures 1-13, col 5 line 48 to col 8 line 48).

Hence, Noyama teaches a system, method, and apparatus for controlling a production operation that automatically controls a production device (i.e. verifying the correct components, set-up, and inhibiting the process if there is an incorrect set-up) by electronically reading printed information from at least one component tape at intervals along the tape via conventional optical scanning and barcode means, wherein the information includes an electronic component count, which is indicative of the position of the electronic component on the component tape. The step of correlating the component count to the position of the electronic component is accomplished by a program stored in the storing section 42 as a result of the input of the part information signal, where the control section 43 of the parts mounting machine 40 reads each parts name and decides whether the parts cassette is in the correct position and displays this results on the display section 44, and further, if the positioning or part number is not correct, the information is read again (see Figures 4, 7, and 8, col 7 lines 1-9 and col 8 lines 1-17). Hence, the independent claims 1, 13, 24, and 31, as well as all of their dependents are taught by Noyama as can be seen above.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: U.S. Patent No. 5,933,349 to Dalglish et al. which discloses a method of component placement, U.S. Patent No. 5,956,925 to Ruble, III which discloses a carrier tape and method for washing of components in carrier tape, U.S.

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Patent No. 5,339,939 to Gueble et al. which discloses a pocket tape feeder system, U.S. Patent No. 4,937,511 to Herndon et al. which discloses a robotic surface mount assembly system, and U.S. Patent No. 6,332,536 to Easton which discloses a component tape including a printed component count.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Lisa M. Caputo** whose telephone number is **(703) 308-8505**. The examiner can normally be reached between the hours of 8:30AM to 5:00PM Monday through Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on 703-305-3503. The fax phone number for this Group is (703)308-7722, (703)308-7724, or (703)308-7382.

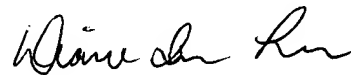
Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [lisa.caputo@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.


LMC

June 1, 2003


DIANE I. LEE
PRIMARY EXAMINER